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Ecological differences between the Grass Owl *Tyto capensis* and the Marsh Owl *Asio capensis*

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Brooke (1965) reported on a collection made by D. W. K. Macpherson in the Furancungo District of northern Mozambique (here interpreted as Mozambique north of the Zambezi River) in 1928-29. He also used further information in Macpherson's field note-book (now in the FitzPatrick Institute,

University of Cape Town, see *Ostrich*, 1974: 208). Despite further contributions by Brooke (1969) and Hanmer (1976), northern Mozambique is still relatively little known ornithologically. As indicated by the former, Macpherson had presented a few of his specimens to the British Museum (Natural History) (BMNH), and I can confirm their presence in Tring (precise number 8). Brooke stated that the remainder of the specimens and clutches of eggs had been lost. In fact, when my wife and I were the guests of Mr and Mrs Macpherson in Malawi in August 1980, he produced a further 50 specimens, which he has most kindly presented to the University Museum of Zoology, Cambridge.

All 50 specimens are correctly identified, dates and localities tallying with those given by Brooke (1965). The most interesting is one of the Grass Owl *Tyto capensis*, from the Bandi River, 18 January 1929. There is a specimen of this species in the BMNH from Beira, collected by Grant, whereas BMNH specimens collected on the Zambezi at Shupanga by Kirk, and at Sena by Alexander are of the Marsh Owl *Asio capensis*. These records have been transposed by Vincent (1934), but are correctly shown by Clancey (1971). Macpherson's specimen of *T. capensis* appears to be the only one from northern Mozambique. The only other one of *A. capensis* from this area may be from southwest of Dedza, Malawi (Benson 1952).

Ecological differences between these 2 species need further investigation. Thus Benson & Benson (1977) record both in the same habitat at Dedza. Masterson (1973) found that in Mashonaland *T. capensis* can tolerate longer grass and drier situations in which to lie up. It would seem, however, that for feeding purposes it is *A. capensis* which is the less tied to moist ground. Thus Irwin (in press) writes of it as "not necessarily on moist ground", whereas *T. capensis* seems less catholic (see also Benson *et al.* 1971, Benson & Benson 1977, Britton 1980). Somewhat contrarily to Masterson, too, D. R. Aspinwall (pers. comm.) finds that *T. capensis* can almost invariably be found in plateau country in Zambia, where there is "knee-high wiry grass/sedge that grows in moist but not inundated places". On the other hand, the habitat of the only *T. capensis* ever observed in Ethiopia (Turner 1974), on 9 May, towards the end of the dry season, would seem more typical of that of *A. capensis* (the record is nevertheless unquestionable). The statement by McLachlan & Liversidge (1978) that *T. capensis* occurs "also in lightly wooded country" is surely nowhere applicable, even allowing for the possibility of some geographical variation in habitat.

Data from Zimbabwe suggest that egg-laying by *T. capensis* may be the more strictly associated with the rains. Irwin (in press) gives 23 records, all for November–May (peak of 9 in March). Of 79 records of *A. capensis*, 74 are for February–May (peak of 59 in March–April), with 2 for June and 1 each for July, August and December. McLachlan & Liversidge (1978) give an incubation period for *T. capensis* of c. 42 days, Earlé (1978) a fledging period of nearly 2 months. From Smith & Killick-Kendrick (1964), it appears that a young of *A. capensis* left the nest after c. 16 days. Data for the Short-eared Owl *A. flammeus* are assumed approximately applicable to its congener. Witherby (1938) gives the incubation period as 24–28 days, the young leaving the nest at 12–17 days, but unable to fly until 24–27 days. It follows that in Zimbabwe young of both species are for the most part being reared at about the same time, mainly in May–June, in the early dry season.

The fewer records from Natal and Zululand (Dean 1971) show *T. capensis* as laying in November–May (discounting 1 anomalous record for July), *A. capensis* in February–June. At Barberspan, western Transvaal, Dean (1978) gives one record each of *T. capensis* for February and April, and 13 of *A. capensis* for March–June. Both layings of the former ended in failure, and even these attempts were only in years of high rainfall.

For Zambia and Malawi, 14 records indicate *T. capensis* as laying in February–June (Benson *et al.* 1971, Benson & Benson 1977, Colebrook-Robjent 1973, Tucker 1980, and Aspinwall, adding unpublished data from himself, Colebrook-Robjent, W. F. Bruce-Miller, R. A. Conant and E. H. Penry). There are no data for *A. capensis* from Malawi, but from Zambia, from the first and the last 2 of the 5 sources above, there are 12 records, for March–June (including 7 for April).

The 2 records of *T. capensis* quoted by Ruth Chapin (1978), wife of J. P. Chapin, for southern Zaire (Shaba) indicate laying in April. Not covered in Brown & Britton (1980), there is a female of *T. capensis* in the BMNH from Njombe, southern Tanzania, collected by R. M. Bell, 3 March 1932, and marked “two eggs”. Yet for further north, 4 records are interpreted by these authors as laying in dry months; while 7 of *A. capensis*, from widespread localities, indicate that it “lays at the end of the rains and rears young in the subsequent dry season”. This latter interpretation agrees rather well with that possible from further south, particularly from the numerous Zimbabwe data. From the Kivu area, Chapin (1978) records nestlings of *T. capensis* in August, Prigogine (1953) in January, March and August. Probably in this area, near the equator, with a wide seasonal distribution of rain (Prigogine 1953: 92), it can breed with success throughout the year. That laying by *A. capensis* is less strictly associated with the rains derives support from Smith & Killick-Kendrick (1964), who record laying in northern Nigeria in the last 3 months of the year, the rains having concluded in October. Also, in Madagascar, where the incidence of the seasons is similar to that at the same latitudes in southern Africa, laying has only been recorded in April, May and July (Rand 1936: 391), in the dry season.

The possibility of competition between the 2 species is alluded to by Brown (1970: 153). In their extensive area of overlap (maps 259, 274 in Snow 1978), it could be aggravated by this lack of any clear-cut difference in their breeding seasons. Yet there may be differences in their prey. At Barberspan, Dean (1978) found that *T. capensis* (mean weight 450 g) takes heavier prey than does *A. capensis* (325 g). Also, *Otomys angoniensis*, a major prey of *T. capensis*, is a vlei rodent, inhabiting moister grasslands than do *Praomys natalensis* and *Rhabdomys pumilio*, major prey of *A. capensis*. At Vaaldam, south central Transvaal, Earlé (1978) records rodents (and termites frequently) as prey of *T. capensis*. In fact 51% of the rodent prey was *R. pumilio*, and *O. angoniensis* is not listed. Nevertheless, Dean's findings support the indications from Zimbabwe and northward that *T. capensis* is more of a moist grassland feeder of the two. At Zimbabwe Ruins, Vernon (1980) found the major prey of *T. capensis* to be rodents, of *A. capensis* insects, again suggesting that in general the former takes larger prey (nevertheless with a wide range, including insects, frogs and a bird as large as the Black Crane *Limnocorax flavirostris*). Incidentally, R. A. Conant and P. B. Taylor (in Aspinwall pers. comm.) both record *A. capensis* as preying on termites on the wing in Zambia.

It may be that in Madagascar, where *T. capensis* is unknown, *A. capensis* has a larger size-range of prey than in Africa. Wing-lengths (from Benson *et al.* 1976) indicate that *A. c. bova* is considerably larger than *A. c. capensis*. Yet in Morocco, where *T. capensis* is also unknown, *A. c. tingitanus* is little if at all larger than *A. c. capensis* (Mackworth-Praed & Grant 1970), although it may be significant that the larger *A. flammeus* is regular as a winterer. Benson *et al.* bring up to date what little is known about the prey of *A. c. bova*, which includes insects, small mammals and a buttonquail *Turnix nigricollis*, but considerably larger items may also be taken.

There is some information on the voice of *A. capensis*, as in Smith & Killick-Kendrick (1964) and McLachlan & Liversidge (1978), but until recently almost nothing on that of *T. capensis* (in Africa). McLachlan & Liversidge merely state "Hisses loudly". Aspinwall (1979) likens the call to that of the Barn Owl *T. alba*, but a little less strident, "a heavily sibilant high-pitched tremolo note lasting one or two seconds". Brooke (1965) quotes no information on voice from Macpherson's notes, but the label of the specimen shows that Macpherson was attracted by a "loud snoring" while the bird was in process of devouring a rat.

Since the above was submitted, Snow & Louette (1981) have rejected sight records of *T. capensis* from central Namibia as due to probable confusion with *A. capensis*. They originate with Hoesch & Niethammer (1940). It seems very unlikely that suitable habitat for *T. capensis* could exist in so arid an area. Although the 2 are very unlike in appearance, sightings only of birds on the wing and/or in poor light make confusion possible. This does not invalidate the general picture already presented, although it might explain the July egg-laying record of *T. capensis* in Dean (1971). Also, there are records from Malawi not covered by Benson & Benson (1977) which are perhaps doubtful. Turner & Mill (in Hunter 1976) give "Regular sightings" of *A. capensis* on the Nyika Plateau. Yet R. J. Dowsett (pers. comm., 30 May 1981), who is better acquainted with this area than any other ornithologist, past or present, writes that he and his wife Dr F. Dowsett-Lemaire have so far only seen *T. capensis* there. Also, Stead & Schulten (1979: 269, 443) believe *T. capensis* to be fairly common, *A. capensis* only rare, at Lake Chilwa. They refer to c. 25 of the former seen from a helicopter—a record questioned by Benson & Benson (1977). In contrast to the Nyika, maybe there is more suitable habitat for *A. capensis* than there is for *T. capensis* around Lake Chilwa.

Gore (1980) refers to *A. capensis* as an apparent visitor to The Gambia, and Louette (1981) alludes to a possible movement from the Jos Plateau, Nigeria to Lake Chad. There could well be movements, due to seasonal flooding of grassland. *T. capensis*, more dependent on permanently moist habitat, may be more strictly sedentary.

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